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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,252	05/04/2006	Daniele Franco Angelo Faccio	05788.0398	6676

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EXAMINER

SANGHAVI, HEMANG

ART UNIT	PAPER NUMBER
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2874

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/578,252

Applicant(s)

FACCIO ET AL.

Examiner

Hemang Sanghavi

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 22-42 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 05/04/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

The prior art documents submitted by Applicant(s) in the Information Disclosure Statement(s) filed on 05/04/06 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

Claim Objections

Claims 24, 25, 35, 39, 40, and 41 are objected to because of the following informalities: In claims 24 and 25, applicant must define "n". In claims 35, 39, 40 and 41, applicant must define " n_1 ", " n_2 ", " λ_{\max} " and " λ_{\min} ". Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 22-38, 40, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grote et al (US 2003/0133490 A1).

Grote et al discloses a tunable optical grid-assisted add-drop filter comprising:
a first waveguide having a first effective refractive index;
a second waveguide having a second effective refractive index, different from the first effective index, and being in substantially close proximity to the first waveguide in a predetermined region to provide coupling there between; and
a grid (grating) positioned in the coupling region for causing the coupling to be wavelength selective for one given wavelength function of the second effective refractive index. It is inherent that each of the first and second waveguides has a core and a cladding (property of optical waveguides). See paragraph [0025] – [0026].

As to claim 24, Grote et al discloses the tunable waveguide material whose refractive index is variable with temperature of 10 K. See paragraph [0026].

As to claim 28, Grote et al discloses the electro-optic coefficient from about 10 pm/V to about 50 pm/V. See paragraph [0028].

As to claim 29, Grote et al discloses to stack waveguides vertically or horizontally. See claims 5-6.

As to claims 35 and 40, see paragraph [0017].

Grote et al substantially discloses all the claimed limitations but fails to state that the second cladding of the second waveguide includes a tunable material.

However, as discussed above, Grote et al discloses a tunable material for the second waveguide. As stated above, the waveguide has inherent optical property of including a core and a cladding. The ordinary artisan reading disclosure of Grote et al would have certainly realize that the cladding material of the second waveguide is made from tunable material (not core) to make the device operative, since the tuning the core material would certainly make the device inoperative.

From available well known knowledge in the art, the ordinary artisan would have found it to be obvious at the time of the invention to realize that a cladding material of the second waveguide is made from tunable material for the purpose of advantageously using the add drop filter in optical communication system.

Claims 39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grote et al and Horita et al (EP 0 778 479 A2).

Grote et al, as discussed above, fails to disclose mathematical formula for the given wavelength outputted by the second waveguide.

As discussed above, Grote et al discloses a basic equation of the grid period and the given wavelength in paragraph [17].

Horita et al, in a related art, discloses an optical add/drop filter including first and second waveguides and a grating provided at a coupling region of the waveguides. Horita et al, in columns 14-16 teaches that the propagation wavelength of the light outputted by the second waveguide depends upon the Bragg condition of the grating and the refractive indices of the waveguides. By setting parameters of the grating perturbation, the desired wavelength can be dropped to the output port.

From teachings of Horita et al, the ordinary artisan would have found it obvious at the time of the invention to set the desired output wavelength dependency of the grating in Grote et al as claimed in claims 39 and 41 for the purpose of advantageously adding/dropping desired wavelength, which is highly desirable in optical communication systems.

Conclusion

Since Horita et al reference used in the above rejection was submitted by applicant in the prior art statement, no copy thereof is provided with this Office action.

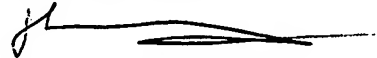
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chan discloses a filter device using thermo-optically controlled Bragg grating. Lackritz et al discloses a filter including a stacked waveguides and a coupling region including grating between the waveguides.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hemang Sanghavi whose telephone number is (571) 272-9955. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2874

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Hemang Sanghavi
Primary Examiner
Art Unit 2874

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